

Quad 100A 4/4-TPA & 4/4-GMT Fuse Alarm Panel

Power :: 009-8005-4404

User Manual



Applies to : 009-8005-4404

Quad 100A 4/4-TPA & 4/4-GMT Fuse Alarm Panel

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1.1 Overview

Telect's quad-input fuse alarm panel is a 1RU secondary power distribution panel containing eight TPA and eight GMT outputs. Each of the quad feeds handles up to 100A. Feeds A1, A2, B1, B2 (A1 & A2 on the left side; B1 & B2 on the other) are assigned to specific TPA and GMT fuses to allow smaller gauge input wiring for the total load rating of 400A per panel.

Each quad feed is electrically independent except for the common fuse alarm LED at the center of the panel. Power LEDs are provided for each feed. Relay controlled alarm and power-fail contacts are provided for wiring to external indicators.

Model 009-8005-4404 is UL listed for US and Canada, File E139903, and NEBS3 Compliant.

1.2 Inspection

Please read and understand all instructions before starting installation. If you have questions, contact Telect Technical Support at support@telect.com or call 1.509.926.6000.

When you receive the equipment, carefully unpack it and compare it to the packaging list. Please report any defective or missing parts to Telect at support@telect.com or call 1.509.926.6000.

Telect is not liable for transit damaged. If the product is damaged, please report it to the carrier and contact Telect.



Figure 1 - Model 009-8005-4404

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1.3 Specifications

Inputs:	Specification:
Voltage & Range	-48Vdc, -40V to -60V
Max. Input Load Rating	100A per feed; 400A total for all four feeds
Nominal Power Dissipation at Full Load	70W per side @ 9600W full load per side (200Ax48V)
Percentage of Full Load Power Dissipation at Nominal Voltage	less than 1%
Max. Input Interrupt Device	125A per BATT input
Input Terminal Studs (With KEPS Nuts & Washers) for Dual-Hole Compression Lugs	Two pairs of M5 studs per feed on 5/8 in. centers. Max. width of lug is ½ in. Torque nut (using 8 mm or 5/16 in. socket) to ~20 in.-lb (~2.25 N•m).
Input Wire Size	#8 to #2 AWG (depends on each input interrupt device)
Grounding:	Specification:
Earth GND for Dual-Hole Compression Lug	Center of rear panel: M5 studs on 5/8-in. (1.59 cm) centers. Use 8mm or 5/16 in. socket. Rear of side panel: 1/4-20 bolts on 5/8-in. centers. Use 7/16-in. socket. Torque nut or bolts to ~20 in.-lb (~2.25 N•m).
Ground Wire Size	Up to #2 AWG (depends on combined capacity of input interrupt devices)
Alarms:	Specification:
Alarm Relay Contacts	2A. @ 30 Vdc 0.6A @ 60 Vdc
Alarm Wire Size	#20 to #12 AWG
Alarm Terminals (Wire Binding)	6, #6 panhead screws [max. lug width of .32 in. (.81 cm)]
Environment:	Specification:
Operating Temperature	-10°C (14°F) to 55°C (131°F)
TPA Outputs:	Specification:
Max. TPA Output Fuse (ea.)	50A
Max. TPA Output Load (ea.) - continuous	40A
Max. Total TPA Output Load	80A per feed (Feeds A1, A2, B1 & B2)
TPA Output Terminals	16, #8 - 32 panhead screws [max. lug width of 0.375 in. (0.96 cm)]. Torque screw to ~17 in.-lb (~1.70 N•m)
TPA Output Wire Size	#18 to #8 AWG (depends on output fuse rating)
GMT Outputs:	Specification:
Max. GMT Output Fuse (ea.)	15A
Max. GMT Output Load (ea.), continuous	12A

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GMT Outputs:		Specification:
Max. Total GMT Output Load		24A per feed (Feeds A1, A2, B1, & B2)
GMT Output Terminals		16, #8 - 32 panhead screws (max. lug width of 0.375 in. [0.96 cm]). Torque screw to ~17 in.-lb (~1.70 N•m)
GMT Output Wire Size		#18 to #8 AWG (depends on output fuse rating)
Dimensions:		Specification:
Nominal, without brackets:*	Width	17.25 in (43.8 cm)
	Height	1.75 in (44.4 cm)
	Depth	8.5 in. (21.6 cm)
	* See Page 11 for exact dimensions	
Weight:		Specification:
Weight, Without Packaging		~14 lb (~6 kg)
Weight, Shipping		~15 lb (~7 kg)

1.4 Installation

! ALERT

ALERT! Only qualified personnel may install and maintain this product. Verify that all connections meet requirements specified in local electric codes or operating company guidelines before supplying power. Protect this equipment with a fuse or breaker sufficient to interrupt the power levels specified in “1.3 Specifications” on page 2 and 3.

NOTE: Panel brackets provide either flush or extended EIA or WECO mounting in a 19-in. or 23-in. rack. Panel is configured at the factory for flush mounting in a 19-in. rack.

1. If necessary, remove the three screws and reposition/re-align brackets on the sides of the distribution panel, as shown in Figure 2.

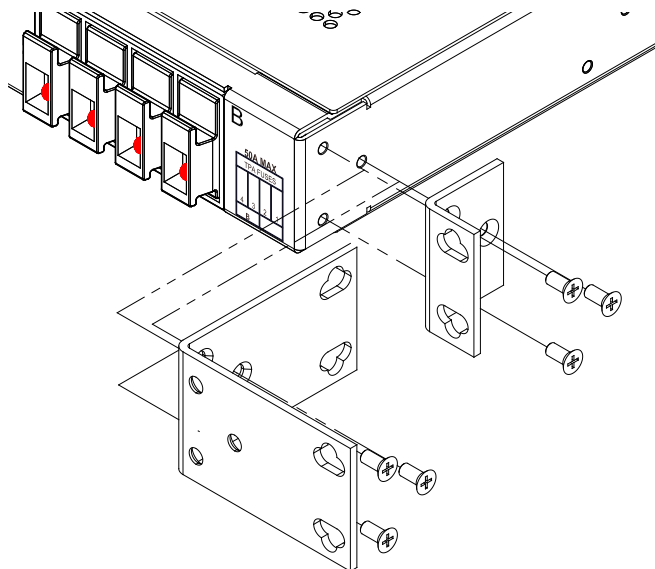


Figure 2 - Bracket Orientation

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2. Locate an unused rack position and mount the panel using the four screws and lock washers provided, as shown in Figure 3. (It is best to mount the panel as high as possible on the rack.)
3. Tighten the screws to 35 in.-lb (4.29 N•m).
4. Loosen (you need not remove) the two screws securing the rear terminal cover on the back of the panel. See Figure 4.
5. Remove the cover.

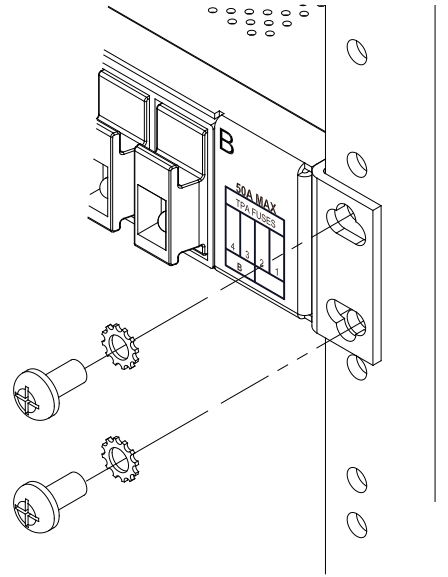


Figure 3 - Rack Mounting

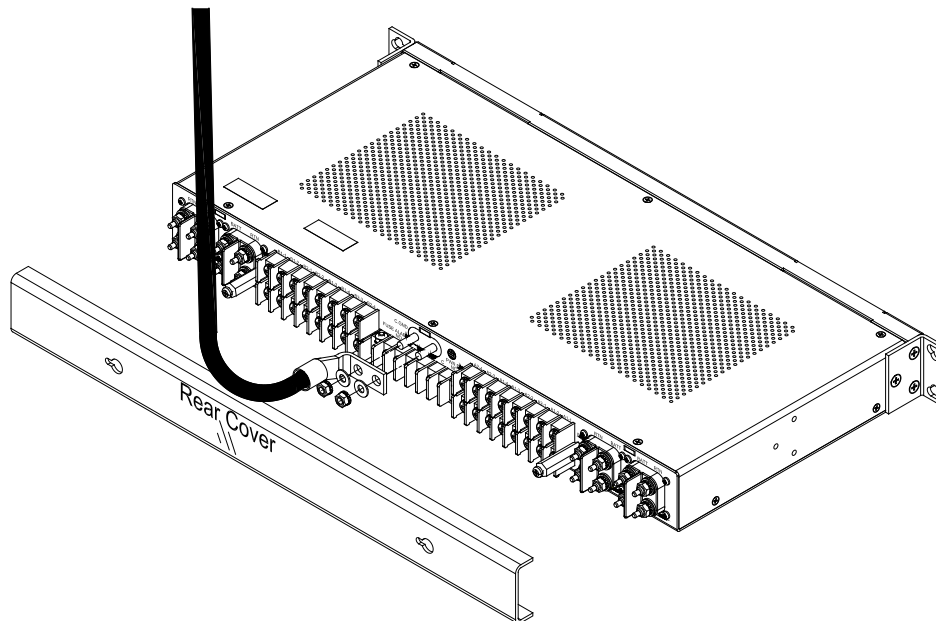


Figure 4 - Ground Lug Connections



WARNING

WARNING! Failure to properly ground this equipment can create hazardous conditions for installation personnel and for the equipment.



ALERT

ALERT! Only use components and crimping tools approved by agencies or certifying bodies recognized in your country or region, such as Underwriter's Laboratories (UL), TUV, etc.

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6. Use a listed (approved) crimping tool to attach a listed (approved), dual-hole compression lug onto suitable ground wire. (Size of ground depends on the input interruption device.) Check local codes and/or operating company guidelines for proper ground wire and lug size.
7. Telect recommends that you lightly coat anti-oxidant on lug, grounding terminal, and surrounding contacting surface.
8. Connect the lug to the terminal using the nuts or bolts and flat washers provided, as shown in Figure 4.
9. Tighten to 20 in.-lb (2.25 N•m).



WARNING

WARNING! Before connecting input power cables, make sure input power to panel is turned off.

10. Make sure input power is off (open breaker, dummy fuse, or fuse holder at power distribution unit [PDU]) before connecting this panel's input cables to PDU.
11. For input wiring — wiring used as inputs to this distribution panel — crimp dual-hole compression lugs onto #8 AWG to #2 AWG copper wires. Insulate lug barrels with UL 94V-0 rated heat shrink tubing.
12. Clean the terminals and lugs with a non-abrasive, non-metallic pad.
13. Telect recommends putting a light coating of anti-oxidant on the lugs and input **BATT** and **RTN** terminals before connecting input terminals on the back of the panel. See Figure 5.
14. Tighten the lugs to ~20 in.-lb (~2.25 N•m).
15. Make sure the TPA fuse positions are either empty or contain dummy fuses (phoney, all-plastic slugs).

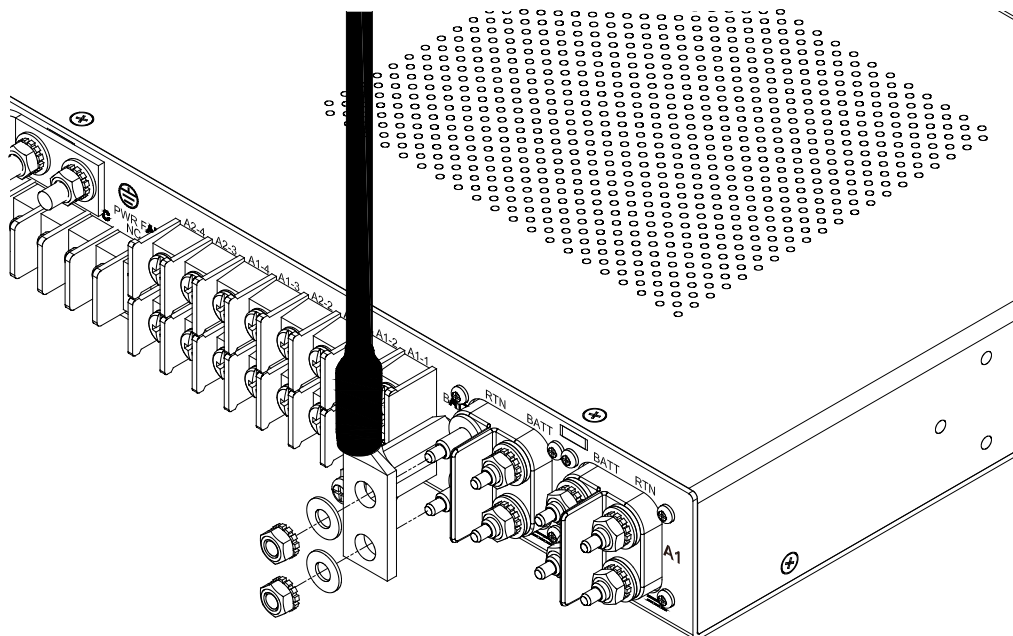


Figure 5 - Input Lugs

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If necessary, pull out the TPA carrier about an inch from its holder to disengage the TPA fuse, as shown in Figure 6.

16. Enable the fuse or breaker at PDU to turn on Feed A1 and then measure voltage and check polarity at input connectors of panel. Also, make sure that:
 - The **INPUT POWER A** LED on the front of the panel turns on (green). (See Figure 7 for the location.)
 - All other LEDs must be off.
17. With **INPUT POWER A** lit (normal operation) — but with all other LEDs off (failure operation) — test power-fail relay contacts at rear of panel:
 - Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NC**.
 - Expect continuity (0Ω) between Terminals **C** and **NO**. See Figure 8.
18. Also, test the fuse alarm relay contacts at the **FUSE ALARM** terminals on the rear of the panel:
 - Expect continuity (0Ω) between Terminals **C** and **NC**.
 - Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NO**.
19. Repeat Steps 16 through 18 for Feed A2.
- NOTE: **INPUT POWER A1** and **INPUT POWER A2** must both be lit.
20. Repeat Steps 16 through 19 for Feed B1, then Feed B2.
21. With all **INPUT POWER** LEDs lit (normal operation), test the power-fail relay and contacts at the **PWR FAIL** terminals on the rear of the panel:
 - Expect continuity (0Ω) between Terminals **C** and **NC**.
 - Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NO**.
22. Make sure none of the fuse positions are engaged or contain operable fuses.
23. For output wiring, crimp single-hole lugs onto one end of #18 AWG to #8 AWG copper output wires, as required by NEC. (Work with one output wire at a time.)

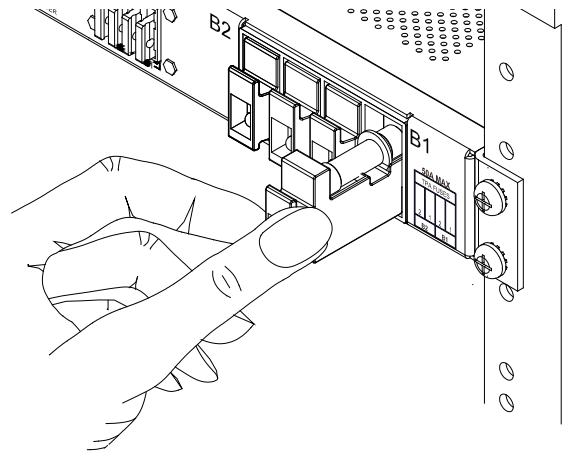


Figure 6 - Disengaging a TPA Fuse Holder

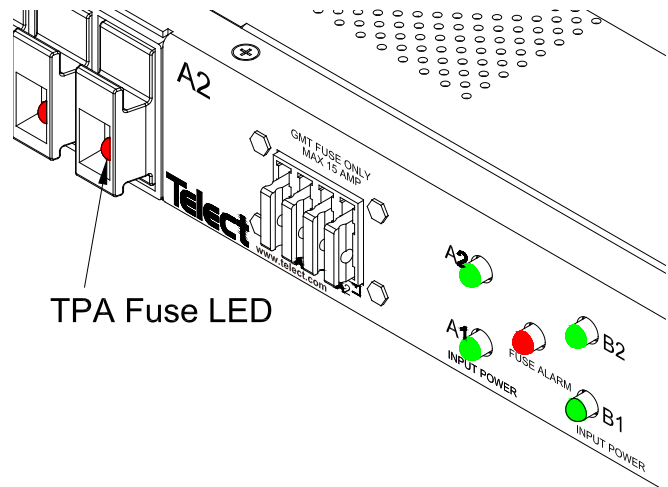


Figure 7 - Alarm Indicators

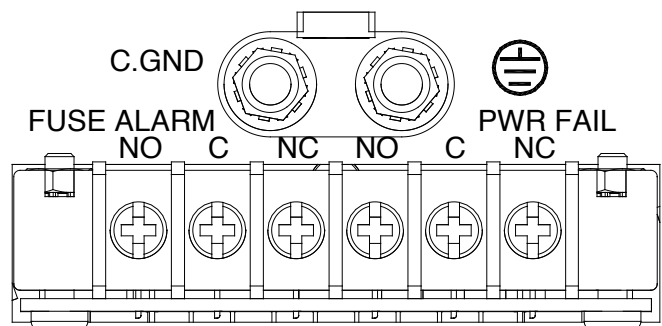


Figure 8 - Alarm Terminals

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24. Clean the panel terminals and lugs with a non-abrasive, non-metallic pad.
25. Remove the panhead screw on the terminal block.
26. Telect recommends that you put a light coating of anti-oxidant on lugs and output **BATT** and **RTN** terminals before connecting lugs to terminals, as shown in Figure 9. (NEC specifies only one lug and load at each output terminal.)
27. Tighten the screw to 17 in.-lb (~1.7 N•m) and then connect the other end of the output wire to load.

⚠ ALERT

ALERT! Local electrical and operating company guidelines recommend that the individual load not exceed 80% of over-current device capacity (for example, 50A TPA fuse x 0.80 = 40A max. load). Total load for each feed containing two TPAs and two GMTs must not exceed 100A.

28. Make sure load devices are disabled and then install fuses by pulling out fuse carrier and inserting operable fuse, as shown in Figure 10.

NOTE: Under load, TPA modules are disconnect devices only and must not be used to reconnect power to enabled equipment loads. Reconnecting a TPA module under power with an enabled load may damage the TPA module.

29. Check the voltage and polarity at the input of each equipment load.
30. If possible temporarily replace one of the operable TPA fuses with a blown fuse to check that the **FUSE ALARM** and the TPA Fuse LEDs light red. Also, check the **FUSE ALARM** terminals on the rear of the panel:

- Expect an open circuit (00Ω) between Terminals **C** and **NC**.
- Expect continuity (0Ω) between Terminals **C** and **NO**.

Re-install the operable TPA fuse before proceeding.

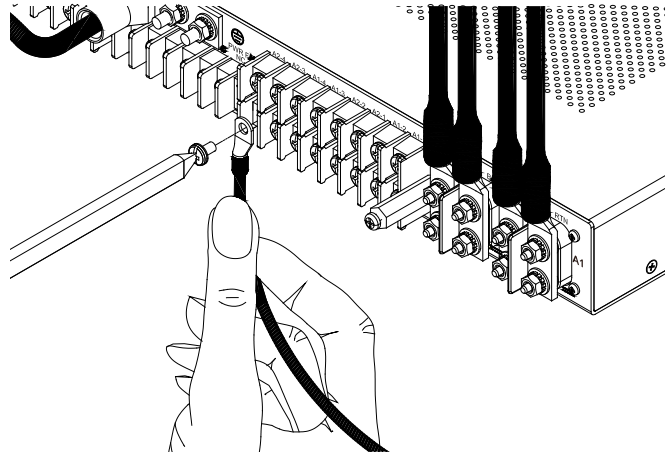


Figure 9 - Output Lug Connections

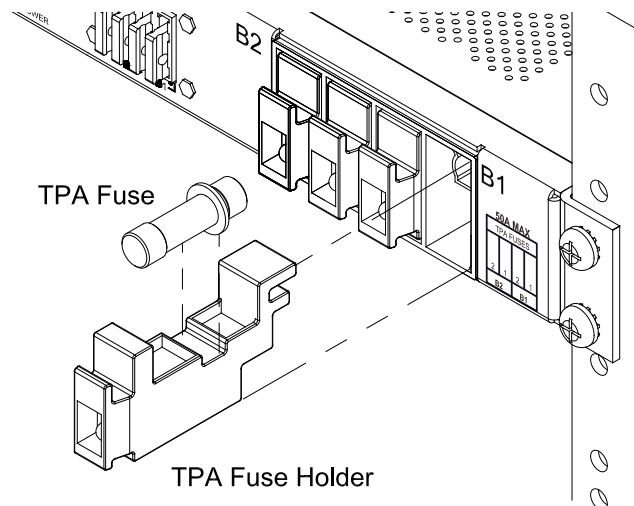


Figure 10 - Installing TPA Fuses

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31. Make sure the load devices to be fed by the GMT fuses are disabled and then install the GMT fuses by pulling out the dummy fuse, and inserting the operable fuse, as shown in Figure 11.
32. Test power and polarity at *each equipment load*.
33. If possible, temporarily replace one of the operable GMT fuses with a blown fuse to check that the **FUSE ALARM** LED lights red. Also, check the **FUSE ALARM** terminals on the rear of the panel. If desired, connect the remote external audio/visual alarm indicator wires (solid or tinned wires, #20 to #12 AWG) to the **PWR FAIL** and **FUSE ALARM** terminals, as shown in Figure 12.
34. Carefully re-install the rear cover.
35. Record the TPA and GMT output destinations on the designation labels on the front panel.
36. Turn on equipment loads one at a time to verify the proper operation of loads

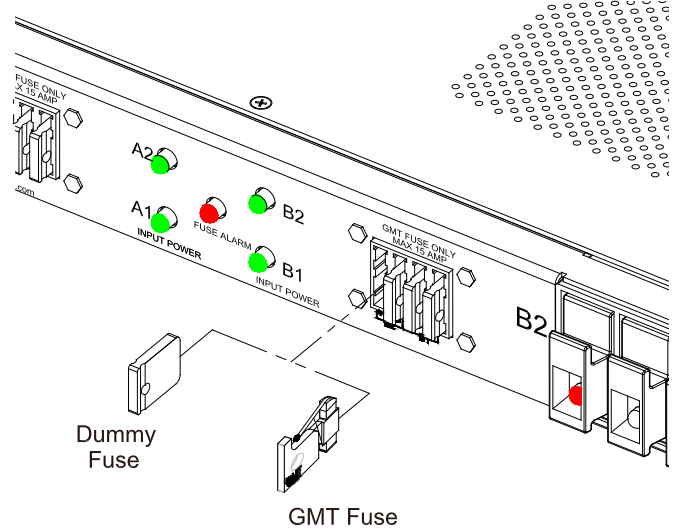


Figure 11 - Installing GMT Fuses

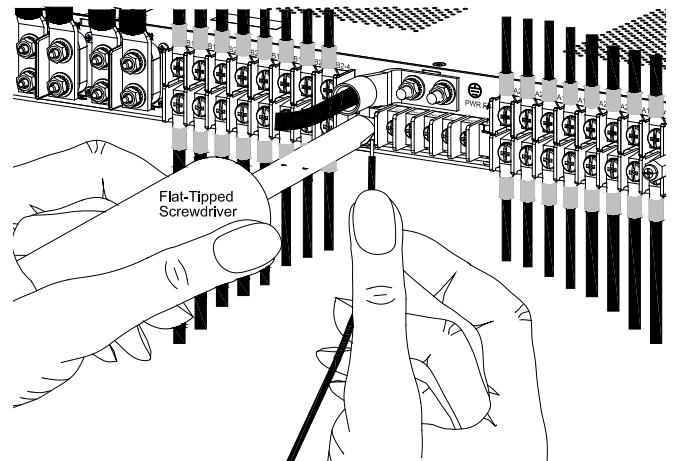


Figure 12 - Installing Alarm Wiring

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1.5 Accessories

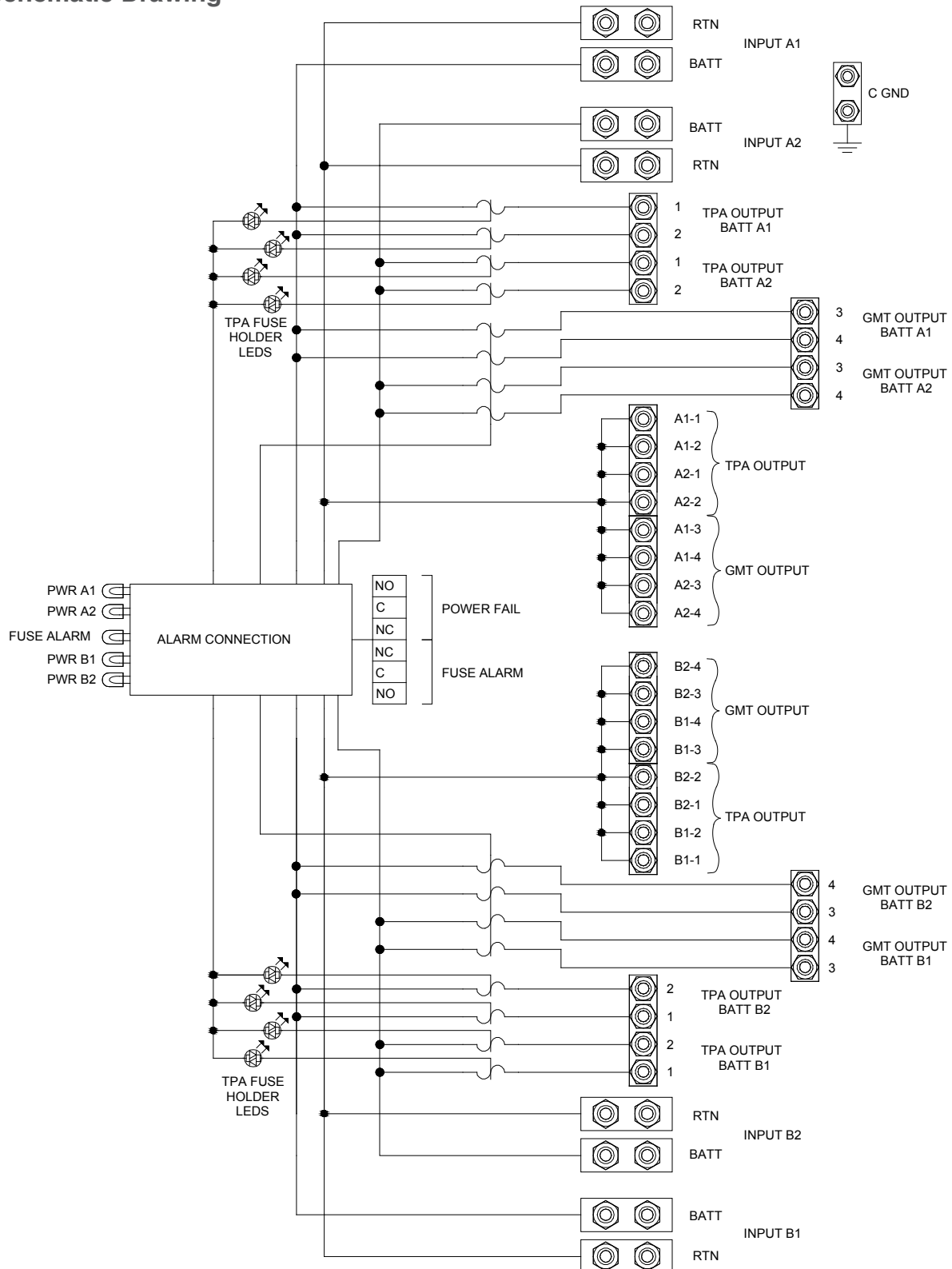
The following lists optional and replacement items for the panel. For compression lugs, please refer to Wire Sizing & Label Convention Chart (Telect Part No. 117995) included with your panel.

Item	Description	Part Number
TPA Fuses	5A	124818
	10A	124819
	15A	124820
	20A	124821
	30A	122734
	40A	122738
	50A	122739
GMT Fuses	¼A Violet (VIO)	100151
	½A Red (RED)	004001
	¾A Brown (BRN)	004008
	1A Gray (GRY)	100991
	11/3A White (WHT)	004006
	1½A White/Yellow (WHT/YEL)	004011
	2A Orange (ORN)	004002
	3A Blue (BLU)	004012
	4A White/Brown (WHT/BRN)	004013
	5A Green (GRN)	004014
	7½A Black/White (BLK/WHT)	004010
	10A Red/White (RED/WHT)	004015
	12A Yellow/Green (YEL/GRN)	102287
	15A Red/Blue (RED/BLU)	102288
	Dummy, Phoney, Plastic Slug	132748
	Safety Covers	116915

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1.6 Schematic Drawing



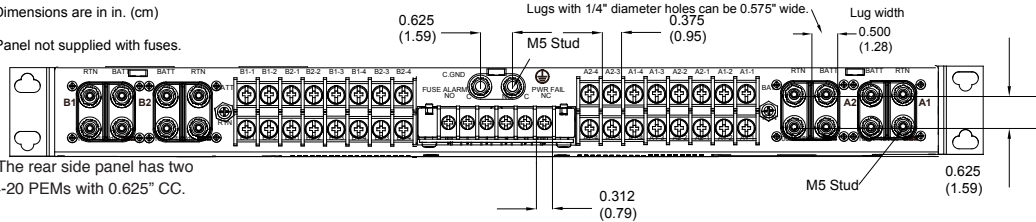
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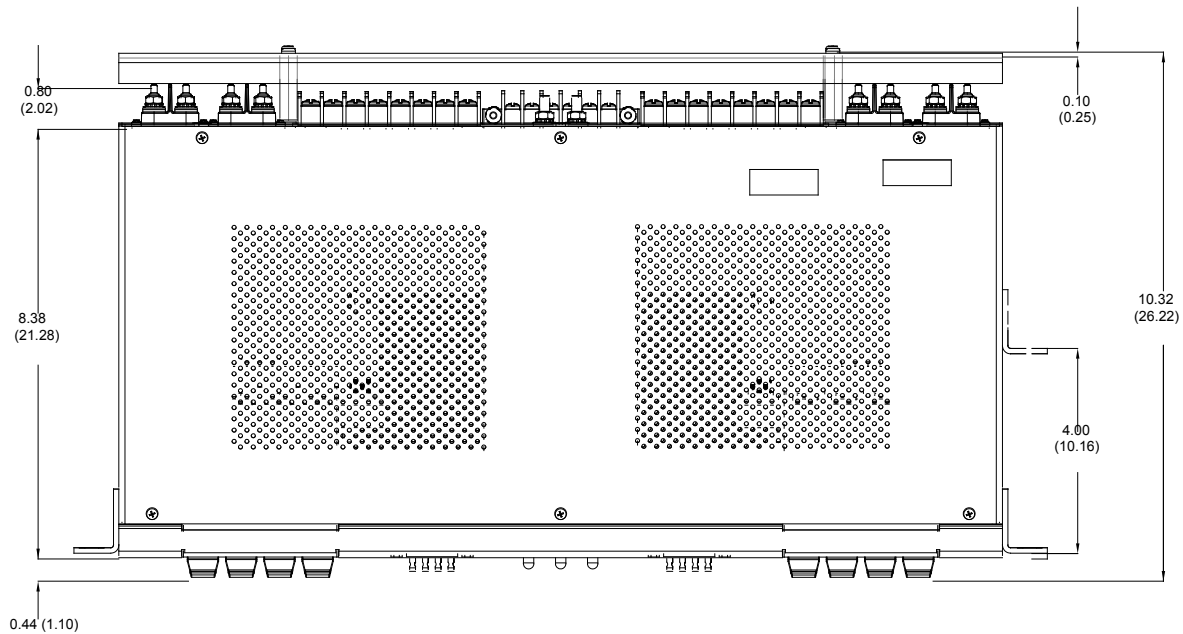
1.7 Assembly Drawing

NOTES:

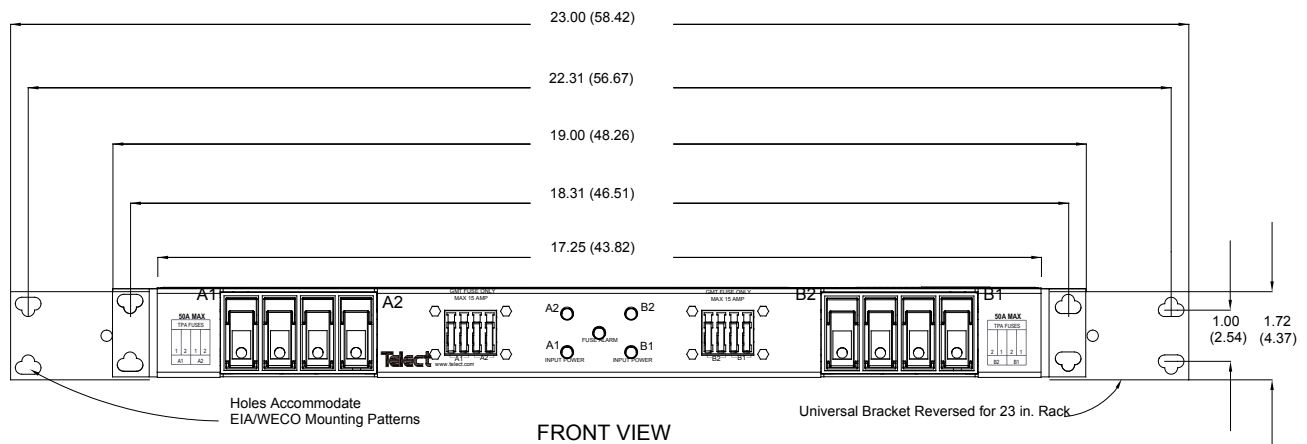
1. Dimensions are in in. (cm)
2. Panel not supplied with fuses.
3. The rear side panel has two 1/4-20 PEMs with 0.625" CC.



REAR VIEW
(ROTATED)



TOP VIEW



FRONT VIEW

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